L Number	Hits	Search Text	DB	Time stamp
1	326	porous WITH alginate	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 14:13
7	104	(porous WITH alginate) and (DNA or nuclei or RNA or sequence$1 or nucleic)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 14:19
13	2	w: [illegible] "4958656"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 14:21
19	2	w: [illegible] "4715195"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 14:21
31	23	(US-5942496-$ or US-5763416-$ or US-6281015-$ or US-6281256-$ or US-[illegible]-$ or US-5885829-$ or US-5433472-$ or US-5498421-$ or US-[illegible]-$ or US-4718861-$ or US-[illegible]-$ or US-6171498-$ or US-[illegible]-$ or US-5541325-$ or US-[illegible]-$ or US-[illegible]-$).did. or (US-20010045672-$).did. or (US-5885829-$ or WO-[illegible]-$ or US-571641[illegible]-$ or WO-[illegible]-$ or WO-[illegible]-$ or WO-[illegible]-$).did. or WO-9423374-$ or WO-[illegible]-$).did.	USPAT; US-PGPUB; EPO; DERWENT	2003/01/23 14:28
36	21	((US-5942496-$ or US-5763416-$ or US-6281015-$ or US-6281256-$ or US-[illegible]-$ or US-5885829-$ or US-5433472-$ or US-5498421-$ or US-[illegible]-$ or US-4718861-$ or US-[illegible]-$ or US-6171498-$ or US-[illegible]-$ or US-[illegible]-$ or US-[illegible]-$ or US-[illegible]-$).did. or (US-20010045672-$).did. or (US-5885829-$ or WO-[illegible]-$ or US-571641[illegible]-$ or WO-[illegible]-$ or WO-[illegible]-$ or WO-[illegible]-$).did. or WO-9423374-$ or WO-[illegible]-$).did.) and porous alginate nucleic DNA	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 15:07
43	21	((US-5942496-$ or US-5763416-$ or US-6281015-$ or US-6281256-$ or US-[illegible]-$ or US-5885829-$ or US-[illegible]-$ or US-5498421-$ or US-[illegible]-$ or US-4718861-$ or US-[illegible]-$ or US-6171498-$ or US-[illegible]-$ or US-5541325-$ or US-[illegible]-$ or US-[illegible]-$).did. or (US-20010045672-$).did. or (US-5885829-$ or WO-[illegible]-$ or US-571641[illegible]-$ or WO-[illegible]-$ or WO-9616424-$ or WO-[illegible]-$).did. or WO-9423374-$ or WO-[illegible]-$).did. and (poro$4 pore$1 alginate nucleic DNA)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 15:22
49	577	(pgla pga pla) SAME (poro$4 pore$1 alginate nucleic DNA)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 15:23
55	214	((pgla pga pla) SAME (poro$4 pore$1 alginate nucleic DNA)) and alginate	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 15:27
61	140	((pgla pga pla) SAME (poro$4 pore$1 alginate nucleic DNA)) and alginate and gel	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/01/23 15:27

-	135	BONADIO	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 16:27
-	10	BONADIO and jeffrey.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 15:50
-	1	BONADIO and SHEA.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 15:50
-	10	BONADIO and goldstein.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 16:13
-	2	("6281.56").PN.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 16:15
-	14	mooney-david-?.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 17:16
-	2	shea-lonnie.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 16:26
-	14012	porous NEAR polymer or microsphere or gel or hydrogel or matrix or alignate)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 17:20
-	1170	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix or alignate)) and DNA or RNA or nucleic or gene)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 17:22
-	158	((porous NEAR (polymer or microsphere or gel or hyarogel or matrix or alignate)) and (DNA or RNA or nucleic or gene)) and (PLGA or lactic$15)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 17:42
-	62	(((porous NEAR (polymer or microsphere or gel or hyarogel or matrix or alignate)) and (DNA or RNA or nucleic or gene)) and (PLGA or lactic$15)) and porous.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 17:46
-	16	(((porous NEAR (polymer or microsphere or gel or hyarogel or matrix or alignate)) and (DNA or RNA or nucleic or gene)) and (PLGA or lactic$15)) and (porous and nucleic or DNA).clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/05/01 17:47
-	14302	porous NEAR (polymer or microsphere or gel or hydrogel or matrix)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:04
-	6795	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix)) and gas$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:18

-	6621	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix)) and gas	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:18
-	1424	((porous NEAR (polymer or microsphere or gel or hydrogel or matrix)) and gas) and gas.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/09/19 15:25
-	45	porous NEAR (polymer or microsphere or gel or hydrogel or matrix) NEAR gas	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:30
-	1194	porous NEAR (polymer or microsphere or gel or hydrogel or matrix) AND gas AND (DNA or nucleic or sequence)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:42
-	12	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix) AND gas AND (DNA or nucleic or sequence)) and 435/325.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:37
-	1	alginate SAME (nucleic or DNA)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:39
-	4490	alginate AND (nucleic or DNA)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:58
-	251	(alginate AND (nucleic or DNA)) and alginate.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:45
-	69	((alginate AND (nucleic or DNA)) and alginate.clm.) and (nucleic or DNA).clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:53
-	31	(((alginate AND nucleic or DNA)) and alginate.clm.) and nucleic or DNA).clm.) and gas	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:54
-	0	(((alginate AND (nucleic or DNA)) and alginate.clm.) and (nucleic or DNA).clm.) and gas.clm.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:54
-	693	(alginate AND (nucleic or DNA)) and porous	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:59
-	355	((alginate AND (nucleic or DNA)) and porous) and gas	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 15:59
-	96	(((porous NEAR (polymer or microsphere or gel or hydrogel or matrix)) and gas) and gas.clm.) and leach$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:05

-	171	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix) AND gas AND (DNA or nucleic or sequence)) and leach$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:07
-	13	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix) AND gas AND (DNA or nucleic or sequence)) and 435/325	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:07
-	12	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix) AND gas AND (DNA or nucleic or sequence)) and 435/325.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:08
-	21	microsphere$3 SAME gas SAME (DNA or nucleic)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:39
-	4	"1?1" and leach$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:40
-	46	435/325.ccls. and leach$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:41
-	1418	435/$3.ccls. and leach$5	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:42
-	32	(porous NEAR (polymer or microsphere or gel or hydrogel or matrix) AND gas AND (DNA or nucleic or sequence)) and (435/$3.ccls. and leach$5)	USPAT; US-PGPUB; EPO; JPO; DERWENT; USOCR	2002/09/19 16:42

(FILE 'HOME' ENTERED AT 15:31:00 ON 23 JAN 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 15:31:08 ON 23 JAN 2003

L1 1419 S ALGINATE (L) POR?
L2 435 S L1 AND GEL
L3 76 S L1 AND (DNA OR RNA OR NUCLEIC OR PLASMID OR VECTOR OR SEQUENC
L4 40 DUP REM L3 (36 DUPLICATES REMOVED)
L5 40 FOCUS L4 1-

=> d an ti so au ab pi l5 1-9

L5 ANSWER 1 OF 40 CAPLUS COPYRIGHT 2003 ACS
AN 1999:736893 CAPLUS
DN 131:332976
TI Sustained **dna** delivery from structural porous matrices for gene therapy applications with special emphasis is on bone formation and regeneration
SO PCT Int. Appl., 144 pp.
CODEN: PIXXD2
IN Shea, Lonnie D.; Bonadido, Jeffrey; Mooney, David J.
AB Disclosed are particular 3-dimensional structural matrixes contg. **DNA** and their use in the prolonged release of **DNA** in various biol. environments. The structural matrix is a **porous** polymer [PLGA]-based contg. **pores** formed by gas foaming involving inert gases (CO2) and leaching out of a water-sol. particulate (salt, NACL, sugar, glucose, sucrose, mannitol) when exposed to body fluids. The admixt. is compression molded into a selected size and shape prior to executing the gas foaming process. The structural matrix may also be an **alginate** or modified **alginate** matrix. This structural matrix is a biocompatible or biodegradable matrix. It may also be a lactic acid polymer, glycolic acid polymer or lactic acid/glycolic acid copolymer matrix. At least part of this matrix may be comprised of lactic acid/glycolic acid (PLGA) copolymer matrix. The structural matrix may be modified where one side section is bonded to one cell interaction mol. such as cell adhesion mols., cell attachment peptides, proteoglycan attachment peptide **sequences**, proteoglycans, cell adhesion polysaccharides, growth factors, cell adhesion enzymes, RGD peptide, fibronectin, vitronectin, Laminin A, Laminin B1, Laminin B2, collagen 1 and thrombospondin. The **DNA**-matrix materials are created such that they maintain a defined space, allowing cellular migration, transfection and proliferation to occur in a controlled manner. Such **DNA**-contg. structural matrixes are thus particularly useful in in vivo cell transfection and gene expression in the context of gene therapy. This may encode a protein for stimulating bone progenitors or wound healing in fibroblast or in tissue or organ regeneration or transplantation or an antigen for immunity or cytotoxic or apoptosis-inducing protein or a transcription factor or elongation factor or cell cycle control protein or kinase or phosphatase or **DNA** repair protein or oncogene or tumor suppressor or angiogenic protein or anti-angiogenic protein or immune response stimulating protein or cell surface receptor or accessory signaling mol. or transport protein or anti-bacterial or anti-viral protein or hormone or neurotransmitter or growth factor or growth factor receptor or interferon or interleukin or chemokine or cytokine or colony stimulating factor or chemotactic factor protein of growth hormone or parathyroid hormone or PTH1-34 polypeptide or bone morphogenic protein or BMP-2A or BMP-2B or BMP-3 or BMP-4 or BMP-5 or BMP-6 or BMP-7 or BMP-8 or TGF-.alpha. or TGF-.beta.1 or TGF-.beta.2 or latent TGF.beta. binding protein or activin/inhibin protein or FGF or GMCSF or EGF or PDGF or insulin-like growth factor or leukemia inhibitory factor. This method allows for the use in gene transfer to cells within a tissue site and in manuf. of a medicament for gene therapy. Implantable medical devices comprising this gene-matrix are described. The release of **nucleic** acids from the matrix is controlled by diffusion. This method also applies to cancer therapy or treating viral infection.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9958656	A2	19991118	WO 1999-US10330	19990512
WO 9958656	A3	20000106		

Elastins
Enzymes, biological studies
Fibrins
Fibroblast
Fibronectins
Glass, biological studies
Globins
Hematopoietic precursor cell
Hormones, animal, biological studies
Immunoglobulins
Interferons
Interleukin 2 receptors
Interleukins
Laminins
Myoblast
Neuroglia
Osteoblast
Peptides, biological studies
Platelet-derived growth factors
Polyamide fibers, biological studies
Polyester fibers, biological studies
Polyesters, biological studies
Polysulfones, biological studies
Proteoglycans, biological studies
Receptors
Silk
Tenascins
Transforming growth factors
Vaccines
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hybrid matrix implants and explants)

IT Drug delivery systems
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(implants; hybrid matrix implants and explants)

IT Skin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(keratinocyte; hybrid matrix implants and explants)

IT Drug delivery systems
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(microspheres; hybrid matrix implants and explants)

IT Nerve
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(neuron, cells; hybrid matrix implants and explants)

IT Muscle
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(smooth, cells; hybrid matrix implants and explants)

IT Pancreatic islet of Langerhans
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.-cell; hybrid matrix implants and explants)

IT 9001-27-8, Factor VIII 9001-28-9, Factor IX 9002-64-6, Parathyroid hormone 9003-05-8, Polyacrylamide 9003-53-6, Polystyrene 9004-10-8, Insulin, biological studies 9004-34-6, Cellulose, biological studies 9004-54-0, Dextran, biological studies 9004-61-9, Hyaluronic acid 9005-32-7, Alginic acid 9005-35-0, Calcium alginate 9007-12-9, Calcitonin 9012-36-6, Agarose 9041-92-3 9050-30-0, Heparan sulfate 11096-26-7, Erythropoietin 12629-01-5, Human growth hormone 24967-94-0, Dermatan sulfate 37228-64-1, Glucocerebrosidase 62229-50-9, Epidermal growth factor 62683-29-8, Colony stimulating factor 67763-96-6, Insulin-like growth factor 1 83869-56-1, Granulocyte-macrophage colony stimulating factor 106096-92-8, Acidic fibroblast growth factor 106096-93-9, Basic fibroblast growth factor 139639-23-9, Tissue plasminogen activator 143011-72-7, Granulocyte colony stimulating factor 169494-85-3, Leptin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hybrid matrix implants and explants)

=>

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE,
DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN,
MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BJ, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9938986 A1 19991129 AU 1999-38986 19990512

L9 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1997:377878 CAPLUS
DN 126:347315
TI Hybrid matrix implants and explants
SO PCT Int. Appl., 50 pp.
CODEN: PIXXD2
IN Mineau-Hanschke, Rochelle
AB An implantable device having a body of matrix material made up of insol. collagen fibrils, and disposed therewithin: (a) a plurality of vertebrate cells; and (b) a plurality of microspheres each of which consists primarily of one or more of the following materials: collagen, polystyrene, dextran, polyacrylamide, cellulose, calcium **alginate**, latex, polysulfone, or glass. A clonal cell strain of human fibroblasts stable transfected with the **plasmid** pXGH302 secreting recombinant human growth hormone was prepd. and combined with **porous** collagen microspheres in a hybrid matrix.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI WO 9715195	A1	19970501	WO 1996-US17114	19961025	<--
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA					
US 5965125	A	19991012	US 1995-548002	19951025	
AU 9674744	A1	19970515	AU 1996-74744	19961025	<--
AU 706563	B2	19990617			
CN 1205613	A	19990120	CN 1996-199324	19961025	
EP 917428	A1	19990526	EP 1996-936960	19961025	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
BR 9611248	A	19991228	BR 1996-11248	19961025	
JP 2000501299	T2	20000208	JP 1997-516803	19961025	
NO 9801859	A	19980624	NO 1998-1859	19980424	<--
AU 736255	B2	20010726	AU 1999-48841	19990921	

TI Hybrid matrix implants and explants
IN Mineau-Hanschke, Rochelle
PA Transkaryotic Therapies, Inc., USA
SO PCT Int. Appl., 50 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A01N063-00
ICS A01N065-00; A61K048-00; A61F013-00; C12N005-16; C12N015-16; C12N015-85; B01D063-00
CC 63-6 (Pharmaceuticals)
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9715195	A1	19970501	WO 1996-US17114	19961025	<--
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA					
	US 5965125	A	19991012	US 1995-548002	19951025	
	AU 9674744	A1	19970515	AU 1996-74744	19961025	<--
	AU 706563	B2	19990617			
	CN 1205613	A	19990120	CN 1996-199324	19961025	
	EP 917428	A1	19990526	EP 1996-936960	19961025	
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
	BR 9611248	A	19991228	BR 1996-11248	19961025	
	JP 2000501299	T2	20000208	JP 1997-516803	19961025	
	NO 9801859	A	19980624	NO 1998-1859	19980424	<--
	AU 736255	B2	20010726	AU 1999-48841	19990921	
PRAI	US 1995-548002	A	19951025			
	WO 1996-US17114	W	19961025			

AB An implantable device having a body of matrix material made up of insol. collagen fibrils, and disposed therewithin: (a) a plurality of vertebrate cells; and (b) a plurality of microspheres each of which consists primarily of one or more of the following materials: collagen, polystyrene, dextran, polyacrylamide, cellulose, calcium **alginate**, latex, polysulfone, or glass. A clonal cell strain of human fibroblasts stable transfected with the **plasmid** pXGH302 secreting recombinant human growth hormone was prepd. and combined with **porous** collagen microspheres in a hybrid matrix.

ST hybrid matrix implant explant

IT Lipoprotein receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(LDL; hybrid matrix implants and explants)

IT Adipose tissue
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adipocyte; hybrid matrix implants and explants)

IT Kidney
Muscle
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cells; hybrid matrix implants and explants)

IT Liver
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hepatocyte; hybrid matrix implants and explants)

IT Collagens, biological studies
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hybrid matrix implants and explants)

IT Angiogenic factors
Antibodies
Antigens
Blood-coagulation factors
Chondrocyte
Cotton
Cytokines
DNA

(FILE 'HOME' ENTERED AT 15:31:00 ON 23 JAN 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 15:31:08 ON 23 JAN 2003

L1 1419 S ALGINATE (L) POR?
L2 435 S L1 AND GEL
L3 76 S L1 AND (DNA OR RNA OR NUCLEIC OR PLASMID OR VECTOR OR SEQUENC
L4 40 DUP REM L3 (36 DUPLICATES REMOVED)
L5 40 FOCUS L4 1-
L6 87 S L1 AND (DNA OR RNA OR NUCLEIC OR PLASMID OR VECTOR OR SEQUENC
L7 45 DUP REM L6 (42 DUPLICATES REMOVED)
L8 24 S L7 AND PY<=1998
L9 24 SORT L8 PY
L10 207376 S HIS

=> d l9 24 all

L9 ANSWER 24 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1999:159891 CAPLUS
DN 130:342815
TI Synthetic extracellular matrixes to guide tissue formation
AU Peters, Martin C.; Mooney, David J.
CS Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, 48109-1078, USA
SO International Congress Series (**1998**), 1170(Tissue Engineering for Therapeutic Use 2), 55-65
CODEN: EXMDA4; ISSN: 0531-5131
PB Elsevier Science B.V.
DT Journal; General Review
LA English
CC 63-0 (Pharmaceuticals)
Section cross-reference(s): 16
AB A review with 44 refs. Tissues engineered from cultured cells may potentially be utilized to treat a variety of diseases, but techniques to promote the development of proper tissue structure and function must first be developed. The native extracellular matrix (ECM) of tissues aids this process during development by providing mech. support to the forming tissue, localizing cells to specific locations, and regulating **gene** expression. Many investigators are attempting to create synthetic analogs to the ECM that will serve these functions, and promote new tissue formation from cultured cells. We propose to utilize combinations of macrostructures to provide tissue-level control of structure with hydrogels to provide cell-level guidance over cell function. Highly **porous** fiber-based and sponge-based macrostructures have been formed from biodegradable synthetic polymers, e.g., polyglycolic acid, using a variety of polymer processing methods. Proper design leads to synthetic ECM which provide mech. support for the developing tissue, and guidance for the development of gross tissue structure. In addn., sol. chem. signals, e.g., protein growth factors, can be delivered to cells utilizing these matrixes. We are also currently developing hydrogels in which cells within the macrostructures can be immobilized. These matrixes are in intimate contact with the cells and provide guidance, at the cell level, over tissue structure and function. **Alginates** (polysaccharides derived from seaweed) have been covalently modified to allow specific cellular recognition and adhesion. These synthetic ECM have shown promise to engineer a variety of tissues, including smooth muscle and dental pulp.
ST review tissue formation extracellular matrix
IT Animal tissue
Animal tissue culture
(synthetic extracellular matrixes to guide tissue formation)
IT Engineering
(tissue; synthetic extracellular matrixes to guide tissue formation)
IT 9005-32-7, Alginic acid 26009-03-0, Polyglycolic acid 26124-68-5, Polyglycolic acid
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(synthetic extracellular matrixes to guide tissue formation)
RE.CNT 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD

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=> d his

(FILE 'HOME' ENTERED AT 15:31:00 ON 23 JAN 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 15:31:08 ON 23 JAN 2003
L1 1419 S ALGINATE (L) POR?
L2 435 S L1 AND GEL
L3 76 S L1 AND (DNA OR RNA OR NUCLEIC OR PLASMID OR VECTOR OR SEQUENC
L4 40 DUP REM L3 (36 DUPLICATES REMOVED)
L5 40 FOCUS L4 1-
L6 87 S L1 AND (DNA OR RNA OR NUCLEIC OR PLASMID OR VECTOR OR SEQUENC
L7 45 DUP REM L6 (42 DUPLICATES REMOVED)
L8 24 S L7 AND PY<=1998
L9 24 SORT L8 PY
L10 207376 S HIS

=> d l9 21 all

L9 ANSWER 21 OF 24 CAPLUS COPYRIGHT 2003 ACS
AN 1997:377878 CAPLUS
DN 126:347315

(FILE 'HOME' ENTERED AT 13:39:01 ON 23 JAN 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 13:39:09 ON 23 JAN 2003

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L1           26 S POROUS ALGINATE
L2           15 DUP REM L1 (11 DUPLICATES REMOVED)
L3           15 SORT L2 PY
L4          449 S POROUS (L) ALGINATE
L5           15 S L4 AND (DNA OR NUCLEIC OR GENE)
L6           10 DUP REM L5 (5 DUPLICATES REMOVED)
L7           10 SORT L6 PY
L8          319 S L4 AND PY<=1998
L9          262 DUP REM L8 (57 DUPLICATES REMOVED)
L10          50 S L9 AND PORE?
L11          65 S L9 AND (PORE? OR GAS)
L12          65 FOCUS L11 1-
L13           4 S L9 AND (DNA OR NUCLEIC OR GENE OR DEOXY? OR RNA OR RIBO? OR

=> d l13 2 all

L13  ANSWER 2 OF 4  CAPLUS  COPYRIGHT 2003 ACS
AN   1997:377878  CAPLUS
DN   126:347315
TI   Hybrid matrix implants and explants
IN   Mineau-Hanschke, Rochelle
PA   Transkaryotic Therapies, Inc., USA
SO   PCT Int. Appl., 50 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  A01N063-00
     ICS  A01N065-00; A61K048-00; A61F013-00; C12N005-16; C12N015-16;
          C12N015-85; B01D063-00
CC   63-6 (Pharmaceuticals)
FAN.CNT 4
     PATENT NO.         KIND  DATE           APPLICATION NO.  DATE
     ---------------    ----  --------       ---------------  --------
PI   WO 9715195         A1    19970501       WO 1996-US17114  19961025 <--
         W:  AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK,
             EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR,
             LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,
             SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM
         RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
             IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA
     US 5965125          A     19991012       US 1995-548002   19951025
     AU 9674744          A1    19970515       AU 1996-74744    19961025 <--
     AU 706563           B2    19990617
     CN 1205613          A     19990120       CN 1996-199324   19961025
     EP 917428           A1    19990526       EP 1996-936960   19961025
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO
     BR 9611248          A     19991228       BR 1996-11248    19961025
     JP 2000501299       T2    20000208       JP 1997-516803   19961025
     NO 9801859          A     19980624       NO 1998-1859     19980424 <--
     AU 736255           B2    20010726       AU 1999-48841    19990921
PRAI US 1995-548002      A     19951025
     WO 1996-US17114     W     19961025
```

AB An implantable device having a body of matrix material made up of insol. collagen fibrils, and disposed therewithin: (a) a plurality of vertebrate cells; and (b) a plurality of microspheres each of which consists primarily of one or more of the following materials: collagen, polystyrene, dextran, polyacrylamide, cellulose, calcium **alginate**, latex, polysulfone, or glass. A clonal cell strain of human fibroblasts stable transfected with the plasmid pXGH302 secreting recombinant human growth hormone was prepd. and combined with **porous** collagen microspheres in a hybrid matrix.

ST hybrid matrix implant explant

IT Lipoprotein receptors
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(LDL; hybrid matrix implants and explants)
IT Adipose tissue
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(adipocyte; hybrid matrix implants and explants)
IT Kidney
Muscle
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cells; hybrid matrix implants and explants)
IT Liver
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hepatocyte; hybrid matrix implants and explants)
IT Collagens, biological studies
RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
(hybrid matrix implants and explants)
IT Angiogenic factors
Antibodies
Antigens
Blood-coagulation factors
Chondrocyte
Cotton
Cytokines
DNA
Elastins
Enzymes, biological studies
Fibrins
Fibroblast
Fibronectins
Glass, biological studies
Globins
Hematopoietic precursor cell
Hormones, animal, biological studies
Immunoglobulins
Interferons
Interleukin 2 receptors
Interleukins
Laminins
Myoblast
Neuroglia
Osteoblast
Peptides, biological studies
Platelet-derived growth factors
Polyamide fibers, biological studies
Polyester fibers, biological studies
Polyesters, biological studies
Polysulfones, biological studies
Proteoglycans, biological studies
Receptors
Silk
Tenascins
Transforming growth factors
Vaccines
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hybrid matrix implants and explants)
IT Drug delivery systems
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(implants; hybrid matrix implants and explants)
IT Skin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(keratinocyte; hybrid matrix implants and explants)
IT Drug delivery systems
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(microspheres; hybrid matrix implants and explants)
IT Nerve
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(neuron, cells; hybrid matrix implants and explants)
IT Muscle
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(smooth, cells; hybrid matrix implants and explants)
IT Pancreatic islet of Langerhans

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(.beta.-cell; hybrid matrix implants and explants)

IT 9001-27-8, Factor VIII 9001-28-9, Factor IX 9002-64-6, Parathyroid hormone 9003-05-8, Polyacrylamide 9003-53-6, Polystyrene 9004-10-8, Insulin, biological studies 9004-34-6, Cellulose, biological studies 9004-54-0, Dextran, biological studies 9004-61-9, Hyaluronic acid 9005-32-7, Alginic acid 9005-35-0, Calcium alginate 9007-12-9, Calcitonin 9012-36-6, Agarose 9041-92-3 9050-30-0, Heparan sulfate 11096-26-7, Erythropoietin 12629-01-5, Human growth hormone 24967-94-0, Dermatan sulfate 37228-64-1, Glucocerebrosidase 62229-50-9, Epidermal growth factor 62683-29-8, Colony stimulating factor 67763-96-6, Insulin-like growth factor 1 83869-56-1, Granulocyte-macrophage colony stimulating factor 106096-92-8, Acidic fibroblast growth factor 106096-93-9, Basic fibroblast growth factor 139639-23-9, Tissue plasminogen activator 143011-72-7, Granulocyte colony stimulating factor 169494-85-3, Leptin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hybrid matrix implants and explants)

=>

L12 ANSWER 1 OF 65 CAPLUS COPYRIGHT 2003 ACS
AN 1988:57576 CAPLUS
DN 108:57576
TI **Porous alginate** moldings
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
IN Hirasa, Okihiko
AB **Porous** moldings useful in culturing of enzymes, microbes, etc. are prepd. by heating aq. **alginates** with aq. poly(vinyl Me ether) (I) to the phase transition temp. (T) of I adding aq. metal salts forming insol. **alginates**, and extg. I with water at temps. below T. A mixt. of 1 part 5% Na **alginate** and 1 part 30% I was coated (0.5 mm) on glass, dipped for 10 min in 2% CuSO4 at 40.degree., removed from the glass, and extd. with water to give a Cu **alginate** film with **pore** diam. 10-50 .mu. and water permeability 70 times that of a film prepd. without I.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	JP 62250040	A2	19871030	JP 1986-93833	19860423	<--
	JP 05053826	B4	19930811			

L12 ANSWER 2 OF 65 CAPLUS COPYRIGHT 2003 ACS
AN 1995:869435 CAPLUS
DN 123:260244
TI Low-density crosslinked porous hydrogel polymer materials having good compression strength and articles formed therefrom
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
IN Unger, Peter D.; Rohrbach, Ronald P.
AB The title materials are prepd. by dissolving a hydrogel polymer selected from **alginates**, gums, starch, dextrins, agar, gelatins, casein, collagen, poly(vinyl alc.), polyethylenimine, acrylate polymers, starch-acrylate polymers, or mixts. or copolymers thereof in a gelling solvent, forming a gel from the soln. into a form, replacing the gelling solvent with a crosslinking solvent using a conc. gradient solvent-exchange process, and treating the gel with a crosslinking agent to form **porous** bodies with a open-celled three-dimensional lattice structure, d. <1.0, surface area .gtoreq.30 m2/g, compressibility .ltoreq.10% yield at 10 psi, and av. **pore** diam. <100 .ANG.. Thus, 5% aq. Na **alginate** soln. was gelled in 0.2 M CaCl2 soln., formed into cubes, treated with aq. 25% acetone, subsequently treated with aq. 50% acetone, then treated with aq. 50% acetone, finally treated with acetone, treated with a mixt. of 2,4-tolylene diisocyanate and triethylamine, heated 16 h at 100-110.degree.to give a crosslinked hydrogel material with apparent bulk d. 0.164, surface area 380 m2/g, **pore** vol. 2.97 cm3/g, and av. **pore** diam. 365 .ANG..

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9512632	A2	19950511	WO 1994-US12645	19941102	<--
	WO 9512632	A3	19950526			
	W: JP					
	US 5502082	A	19960326	US 1993-148110	19931104	<--
	JP 08505431	T2	19960611	JP 1994-513411	19941102	<--

L12 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2003 ACS
AN 1978:173017 CAPLUS
DN 88:173017
TI Porous material
SO Ger. Offen., 26 pp.
CODEN: GWXXBX
IN Miles, Brynley John
AB Discrete **porous** particles for mol. sieve applications are made by mixing a finely distributed, practically insol., absorbent inorg. material in an aq. soln. of a sol. **alginate**(e.g., Na **alginate**) to form the slurry into droplets, contacting the droplets with a reagent (e.g., aq. NaCl soln.) to ppt. the sol. **alginate** as insol. **alginate** thus producing intermediate particles contg. the inorg. material combined with the pptd. **alginate**. The **alginate** is at least partially removed by heating to yield discrete **porous** particles. The **alginate** may be pptd. with an acid. A 2nd **pore**-forming substance may be added to increase or modify the porosity. Thus, TiO2 is slurried in a 1% aq. Na **alginate** soln. in a ball mill for 5 h, the slurry added in droplets to a 0.1 M NaCl soln. to form discrete particles contg. TiO2 particles bonded by the Ca **alginate** pptd. The particles are transferred to MeOH, dehydrated, heated to 100.degree. for 1-2 h, and sintered at 900.degree.. Discrete **porous** TiO2 particles with a diam. of 500.mu. are obtained.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2727143	A1	19771229	DE 1977-2727143	19770616 <--
	DE 2727143	C2	19890323		
	GB 1586364	A	19810318	GB 1976-25209	19760617 <--
	SE 7706990	A	19771218	SE 1977-6990	19770616 <--
	SE 435717	B	19841015		
	SE 435717	C	19850124		
	NL 7706730	A	19771220	NL 1977-6730	19770617 <--
	JP 52154814	A2	19771222	JP 1977-71947	19770617 <--
	JP 63023158	B4	19880514		
	SE 8207520	A	19821230	SE 1982-7520	19821230 <--
	SE 451715	B	19871026		
	SE 451715	C	19880204		

(FILE 'HOME' ENTERED AT 13:39:01 ON 23 JAN 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 13:39:09 ON 23 JAN 2003

L1 26 S POROUS ALGINATE
L2 15 DUP REM L1 (11 DUPLICATES REMOVED)
L3 15 SORT L2 PY
L4 449 S POROUS (L) ALGINATE
L5 15 S L4 AND (DNA OR NUCLEIC OR GENE)
L6 10 DUP REM L5 (5 DUPLICATES REMOVED)
L7 10 SORT L6 PY

=> d an ti so au ab pi l7 4 2 3 6 8

L7 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 1999:736893 CAPLUS
DN 131:332976
TI Sustained **dna** delivery from structural porous matrices for **gene** therapy applications with special emphasis is on bone formation and regeneration
SO PCT Int. Appl., 144 pp.
CODEN: PIXXD2
IN Shea, Lonnie D.; Bonadido, Jeffrey; Mooney, David J.
AB Disclosed are particular 3-dimensional structural matrixes contg. **DNA** and their use in the prolonged release of **DNA** in various biol. environments. The structural matrix is a **porous** polymer [PLGA]-based contg. pores formed by gas foaming involving inert gases (CO2) and leaching out of a water-sol. particulate (salt, NACL, sugar, glucose, sucrose, mannitol) when exposed to body fluids. The admixt. is compression molded into a selected size and shape prior to executing the gas foaming process. The structural matrix may also be an **alginate** or modified **alginate** matrix. This structural matrix is a biccompatible or biodegradable matrix. It may also be a lactic acid polymer, glycolic acid polymer or lactic acid/glycolic acid copolymer matrix. At least part of this matrix may be comprised of lactic acid/glycolic acid (PLGA) copolymer matrix. The structural matrix may be modified where one side section is bonded to one cell interaction mol. such as cell adhesion mols., cell attachment peptides, proteoglycan attachment peptide sequences, proteoglycans, cell adhesion polysaccharides, growth factors, cell adhesion enzymes, RGD peptide, fibronectin, vitronectin, Laminin A, Laminin B1, Laminin B2, collagen 1 and thrombospondin. The **DNA**-matrix materials are created such that they maintain a defined space, allowing cellular migration, transfection and proliferation to occur in a controlled manner. Such **DNA**-contg. structural matrixes are thus particularly useful in in vivo cell transfection and **gene** expression in the context of **gene** therapy. This may encode a protein for stimulating bone progenitors or wound healing in fibroblast or in tissue or organ regeneration or transplantation or an antigen for immunity or cytotoxic or apoptosis-inducing protein or a transcription factor or elongation factor or cell cycle control protein or kinase or phosphatase or **DNA** repair protein or oncogene or tumor suppressor or angiogenic protein or anti-angiogenic protein or immune response stimulating protein or cell surface receptor or accessory signaling mol. or transport protein or anti-bacterial or anti-viral protein or hormone or neurotransmitter or growth factor or growth factor receptor or interferon or interleukin or chemokine or cytokine or colony stimulating factor or chemotactic factor protein of growth hormone or parathyroid hormone or PTH1-34 polypeptide or bone morphogenic protein or BMP-2A or BMP-2B or BMP-3 or BMP-4 or BMP-5 or BMP-6 or BMP-7 or BMP-8 or TGF-.alpha. or TGF-.beta.1 or TGF-.beta.2 or latent TGF.beta. binding protein or activin/inhibin protein or FGF or GMCSF or EGF or PDGF or insulin-like growth factor or leukemia inhibitory factor. This method allows for the use in **gene** transfer to cells within a tissue site and in manuf. of a medicament for **gene** therapy. Implantable medical devices comprising this **gene** -matrix are described. The release of **nucleic** acids from the matrix is controlled by diffusion. This method also applies to cancer therapy or treating viral infection.
PATENT NO. KIND DATE APPLICATION NO. DATE

PI	WO 9958656	A2	19991118	WO 1999-US10330	19990512
	WO 9958656	A3	20000106		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BJ, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9938986	A1	19991129	AU 1999-38986	19990512

L7 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 1997:377878 CAPLUS
DN 126:347315
TI Hybrid matrix implants and explants
SO PCT Int. Appl., 50 pp.
CODEN: PIXXD2
IN Mineau-Hanschke, Rochelle
AB An implantable device having a body of matrix material made up of insol. collagen fibrils, and disposed therewithin: (a) a plurality of vertebrate cells; and (b) a plurality of microspheres each of which consists primarily of one or more of the following materials: collagen, polystyrene, dextran, polyacrylamide, cellulose, calcium **alginate**, latex, polysulfone, or glass. A clonal cell strain of human fibroblasts stable transfected with the plasmid pXGH302 secreting recombinant human growth hormone was prepd. and combined with **porous** collagen microspheres in a hybrid matrix.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9715195	A1	19970501	WO 1996-US17114	19961025
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	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
	US 5965125	A	19991012	US 1995-548002	19951025
	AU 9674744	A1	19970515	AU 1996-74744	19961025
	AU 706563	B2	19990617		
	CN 1205613	A	19990120	CN 1996-199324	19961025
	EP 917428	A1	19990526	EP 1996-936960	19961025
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 9611248	A	19991228	BR 1996-11248	19961025
	JP 2000501299	T2	20000208	JP 1997-516803	19961025
	NO 9801859	A	19980624	NO 1998-1859	19980424
	AU 736255	B2	20010726	AU 1999-48841	19990921

L7 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 1999:159891 CAPLUS
DN 130:342815
TI Synthetic extracellular matrixes to guide tissue formation
SO International Congress Series (1998), 1170(Tissue Engineering for Therapeutic Use 2), 55-65
CODEN: EXMDA4; ISSN: 0531-5131
AU Peters, Martin C.; Mooney, David J.
AB A review with 44 refs. Tissues engineered from cultured cells may potentially be utilized to treat a variety of diseases, but techniques to promote the development of proper tissue structure and function must first be developed. The native extracellular matrix (ECM) of tissues aids this process during development by providing mech. support to the forming tissue, localizing cells to specific locations, and regulating **gene** expression. Many investigators are attempting to create synthetic analogs to the ECM that will serve these functions, and promote new tissue formation from cultured cells. We propose to utilize combinations of macrostructures to provide tissue-level control of structure with hydrogels to provide cell-level guidance over cell

function. Highly **porous** fiber-based and sponge-based macrostructures have been formed from biodegradable synthetic polymers, e.g., polyglycolic acid, using a variety of polymer processing methods. Proper design leads to synthetic ECM which provide mech. support for the developing tissue, and guidance for the development of gross tissue structure. In addn., sol. chem. signals, e.g., protein growth factors, can be delivered to cells utilizing these matrixes. We are also currently developing hydrogels in which cells within the macrostructures can be immobilized. These matrixes are in intimate contact with the cells and provide guidance, at the cell level, over tissue structure and function. **Alginates** (polysaccharides derived from seaweed) have been covalently modified to allow specific cellular recognition and adhesion. These synthetic ECM have shown promise to engineer a variety of tissues, including smooth muscle and dental pulp.

L7 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2003 ACS
AN 2002:118123 CAPLUS
DN 136:139515
TI Automatic water toxicant measuring instrument using immobilized photogenic microorganism
SO Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
IN Lee, Jeong Geon
AB PURPOSE: An automatic water toxicant measuring instrument is provided which measures the light emission of photogenic microorganisms induced by toxicants, in which pretreatment of photogenic microorganisms is not involved so, the app. measures water toxicant easily and economically. CONSTITUTION: An instrument for measuring water toxicant using photogenic microorganisms comprises the following parts: (1) a stage driving part consisting of plural vials which contains test samples and immobilized microorganisms, a movable X-Y stage, a sub-driver connected to the stage, and a controller connected to the sub-driver for controlling the position of the stage; (2) a sample supplying part consisting of an sample inlet, a test sample storage plant, of which one side is connected to an automatic sample collector and other side is connected to an outlet of water, and a sample inlet controller connected to the sample inlet; (3) a luminescence intensity measuring part; and an arithmetic and control part. Immobilized microorganisms are as follows; Photogenic microorganisms such as Photobacterium phosphoreum, Vibrio fischeri, or recombinant microorganisms with lux **gene** are immobilized on **porous** matrix such as sodium **alginate**, strontium **alginate**, .kappa.-carrageenan, polyacrylamide, cellulose or agarose. Sample water is sequentially added to aligned vials contg. immobilized photogenic microorganism and the difference of luminescence intensity is measured by luminescence dosimeter before and after the sample injection.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	KR 2000031934	A	20000605	KR 1998-48198	19981111

L7 ANSWER 8 OF 10 MEDLINE
AN 2001479229 MEDLINE
TI Three-dimensional cartilage formation by bone marrow-derived cells seeded in polylactide/alginate amalgam.
SO JOURNAL OF BIOMEDICAL MATERIALS RESEARCH, (2001 Dec 5) 57 (3) 394-403. Journal code: 0112726. ISSN: 0021-9304.
AU Caterson E J; Nesti L J; Li W J; Danielson K G; Albert T J; Vaccaro A R; Tuan R S
AB Bone marrow-derived cells are considered as candidate cells for cartilage tissue engineering by virtue of their ability to undergo chondrogenesis in vitro when cultured in high density or when embedded within a three-dimensional matrix in the presence of growth factors. This study evaluated the potential of human bone marrow-derived cells for cartilage tissue engineering by examining their chondrogenic properties within a three-dimensional amalgam scaffold consisting of the biodegradable polymer, poly-L-lactic acid (PLA) alone, and with the polysaccharide gel, **alginate**. Cells were suspended either in **alginate** or medium and loaded into **porous** PLA blocks. **Alginate** was used to improve cell loading and retention within the construct, whereas the PLA polymeric scaffold provided appropriate mechanical support and stability to the composite culture. Cells seeded in the PLA/

alginate amalgams and the plain PLA constructs were treated with different concentrations of recombinant human transforming growth factor-beta1 (TGF-beta 1) either continuously (10 ng/mL) or only for the initial 3 days of culture (50 ng/mL). Chondrogenesis was assessed at weekly intervals with cultures maintained for up to 3 weeks. Histological and immunohistochemical analysis of the TGF-beta 1-treated PLA/**alginate** amalgam and PLA constructs showed development of a cartilaginous phenotype from day 7 to day 21 as demonstrated by colocalization of Alcian blue staining with collagen type II and cartilage proteoglycan link protein. Expression of cartilage specific **genes**, including collagen types II and IX, and aggrecan, was detected in TGF-beta 1-treated cultures by reverse transcription-polymerase chain reaction analysis. The initiation and progression of chondrogenic differentiation within the polymeric macrostructure occurred with both continuous and the initial 3-day TGF-beta 1 treatment regimens, suggesting that key regulatory events of chondrogenesis take place during the early period of cell growth and proliferation. Scanning electron microscopy revealed abundant cells with a rounded morphology in the PLA/**alginate** amalgam. These findings suggest that the three-dimensional PLA/**alginate** amalgam is a potential candidate bioactive scaffold for cartilage tissue engineering applications. J Biomed Mater Res 57: 394-403, 2001

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(FILE 'HOME' ENTERED AT 13:39:01 ON 23 JAN 2003)

FILE 'MEDLINE, AGRICOLA, CANCERLIT, SCISEARCH, CAPLUS, MEDICONF' ENTERED AT 13:39:09 ON 23 JAN 2003

L1 26 S POROUS ALGINATE
L2 15 DUP REM L1 (11 DUPLICATES REMOVED)
L3 15 SORT L2 PY

=> d an ti so au ab pi l3 12 3-9

L3 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2003 ACS
AN 2000:488827 CAPLUS
DN 133:271550
TI Porous carriers for biomedical applications based on alginate hydrogels
SO Biomaterials (2000), 21(19), 1921-1927
CODEN: BIMADU; ISSN: 0142-9612
AU Eiselt, P.; Yeh, J.; Latvala, R. K.; Shea, L. D.; Mooney, D. J.
AB Macroporous scaffolds are typically utilized in tissue engineering applications to allow for the migration of cells throughout the scaffold and integration of the engineered tissue with the surrounding host tissue. A method to form macroporous beads with an interconnected pore structure from alginate has been developed by incorporating gas pockets within alginate beads, stabilizing the gas bubbles with surfactants, and subsequently removing the gas. Macroporous scaffolds could be formed from alginate with different av. mol. wts. (5-200 kDa) and various surfactants. The gross morphol., amt. of interconnected pores, and total void vol. was investigated both qual. and quant. Importantly, macroporous alginate beads supported cell invasion in vitro and in vivo.

L3 ANSWER 3 OF 15 SCISEARCH COPYRIGHT 2003 ISI (R)
AN 79:368377 SCISEARCH
TI USE OF **POROUS ALGINATE** MATERIAL ALGIPOR IN TREATMENT OF BURNS
SO KHIRURGIYA, (1979) Vol. 1979, No. 8, pp. 86-88.
AU KUZIN M I (Reprint); SOLOGUB V K; YUDENICH V V; RESHETOV I A; YAKOVLEV G B

L3 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2003 ACS
AN 1987:50599 CAPLUS
DN 106:50599
TI **Porous alginate** material
SO U.S.S.R.
From: Otkrytiya, Izobret. 1985, (29), 105-6.
CODEN: URXXAF
IN Vainerman, E. S.; Lozinskii, V. I.; Rogozhin, S. V.; Raskina, L. P.; Shapiro, L. A.; Yakubovich, V. S.; Bronshtein, B. Yu.
AB A porus alginate material with increased d. and high H2O-retaining capacity is prepd. by mixing a 1-4% soln. of Na alginate with a 1-4% soln. of a Ca salt at a 3:1-8:1 molar ratio of alginate monosaccharide unit to Ca salt. The resulting mixt. is frozen in 3-30 min at -6.degree. to -190.degree., allowed to stand for 1-24 h, thawed, and dried under mech. compression.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI SU 1171474	A1	19850807	SU 1983-3600824	19830607

L3 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2003 ACS
AN 1986:193214 CAPLUS
DN 104:193214
TI **Porous alginate** with a wound-healing effect
SO U.S.S.R.
From: Otkrytiya, Izobret. 1985, (29), 106.
CODEN: URXXAF
IN Vainerman, E. S.; Lozinskii, V. I.; Rogozhin, S. V.; Raskina, L. P.; Shapiro, L. A.; Yakubovich, V. S.; Shenker, M. B.; Komissarova, A. L.; Potapov, V. D.; et al.
AB The resistance of the porous surgical material described in USSR Patent 658148 to an aq. medium is improved by keeping the gel obtained from mixing an aq. soln. of Na alginate with a Ca salt in a frozen state from -20 to -40.degree. for 3-24 h prior to freeze-drying.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 1171476	A2	19850807	SU 1983-3614921	19830607

L3 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2003 ACS
AN 1988:57576 CAPLUS
DN 108:57576
TI **Porous alginate** moldings
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
IN Hirasa, Okihiko
AB Porous moldings useful in culturing of enzymes, microbes, etc. are prepd. by heating aq. alginates with aq. poly(vinyl Me ether) (I) to the phase transition temp. (T) of I adding aq. metal salts forming insol. alginates, and extg. I with water at temps. below T. A mixt. of 1 part 5% Na alginate and 1 part 30% I was coated (0.5 mm) on glass, dipped for 10 min in 2% CuSO4 at 40.degree., removed from the glass, and extd. with water to give a Cu alginate film with pore diam. 10-50 .mu. and water permeability 70 times that of a film prepd. without I.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62250040	A2	19871030	JP 1986-93833	19860423
	JP 05053826	B4	19930811		

L3 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2003 ACS
AN 1993:630640 CAPLUS
DN 119:230640
TI Low-density polymeric materials having high porosity and surface areas for metal recovery by extraction
SO PCT Int. Appl., 73 pp.
CODEN: PIXXD2
IN Unger, Peter D.; Rohrbach, Ronald P.
AB The porous polymers having an open-cell structure with d. <1.0 g/cm3 and pore vol. .gtoreq.0.5 cm3/g can be prepd. from a gel-forming material or derived from a natural or synthetic polysaccharide, and can be modified for recovery of metal values from fluid streams (esp. by extn.). The synthetic polymers have sp. surface area .gtoreq.85 m2/g (or .gtoreq.200 m2/g if prepd. from chitosan), and are suitable for use in extn. columns. The porous polymers can be manufd. from a gel preform by replacing the gelling solvent with a crosslinking solvent, adding a crosslinking agent, and sepn. of the polymer from the residual solvent. The polymers can be modified for removal of org. or inorg. pollutants, or optionally carbonized for other applications. Thus, **porous alginate** pellets were manufd. with bulk d. of 0.042 g/cm3, sp. surface area 200 m2/g, pore vol. 2.917 cm3/g, and av. pore size 517 .ANG.. The porous pellets were suitable for extn. of Cd2+, Ni2+, Pb2+, Cu2+, and Cr3+ ions present at 10-1000 ppm in aq. test solns.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9312877	A1	19930708	WO 1992-US10567	19921209
	W: JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 625070	A1	19941123	EP 1993-900963	19921209
	EP 625070	B1	19980708		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	JP 06511197	T2	19941215	JP 1992-511687	19921209
	AT 168040	E	19980715	AT 1993-900963	19921209
	ES 2118219	T3	19980916	ES 1993-900963	19921209
	US 5525710	A	19960611	US 1994-304617	19940912

L3 ANSWER 8 OF 15 MEDLINE
AN 97478063 MEDLINE
TI **Porous alginate**--poly(ethylene glycol) entrapment system for the cultivation of mammalian cells.
SO BIOTECHNOLOGY PROGRESS, (1997 Sep-Oct) 13 (5) 569-76.
Journal code: 8506292. ISSN: 8756-7938.
AU Seifert D B; Phillips J A
AB A novel gel entrapment method has been developed where macropores are created within alginate beads to provide an environment for high-density growth of mammalian cells. The method takes advantage of an interaction

between poly(ethylene glycol) (PEG) and alginate to provide a network of pores within the bead for growth while the surrounding alginate matrix retains the integrity of the bead and minimizes cell leakage. Hybridomas were grown to a density approaching 10(8) cells/mL of beads in this system, while conventional alginate restricted growth to a maximum of 2 x 10(7) cells/mL of beads. In addition, cell leakage was minimal even at high cell densities, which was not the case with the conventional alginate system. Study of the conventional system determined that cell growth was limited by the alginate matrix; increasing the alginate concentrations resulted in lower final cell densities. In contrast, the PEG-alginate system permits growth in pores so the alginate matrix serves only as a structural matrix for cells. The pore size can be varied as a function of PEG concentration (10-20 wt % PEG) to provide radially defined areas for cell growth and radial diffusion pathways for nutrients/products in the adjacent alginate matrix. Because the PEG-alginate entrapment process does not require additional chemical reactions or temperature changes, the system offers a simple alternative to attain high cell densities in an immobilized bead system. As an illustration of the concept, cells entrapped in this system were grown to high density in both batch and perfusion modes for the production of monoclonal antibodies. Using the suspension batch culture as the base case, the specific monoclonal antibody production rate increased 1.6-fold for the slower growing batch-immobilized culture and 3-fold for the immobilized perfusion culture.

L3 ANSWER 9 OF 15 SCISEARCH COPYRIGHT 2003 ISI (R)
AN 96:897210 SCISEARCH
TI Controlled release of interleukin-2 for tumour immunotherapy using alginate/chitosan porous microspheres
SO JOURNAL OF CONTROLLED RELEASE, (3 JAN 1997) Vol. 43, No. 1, pp. 65-74. Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0168-3659.
AU Liu L S; Liu S Q; Ng S Y; Froix M; Ohno T; Heller J (Reprint)
AB Porous microspheres were formed by the gelation of two polysaccharides, a polyanionic sodium alginate and a polycationic chitosan, followed by lyophilization which creates the porous structure. Porous microspheres were also formed by gelation of sodium alginate with CaCl2 and gelation of sodium alginate with polylysine. FITC-BSA was incorporated into the microspheres by mixing the protein with the polysaccharide solution prior to gelation. Interleukin-2 (IL-2) was incorporated into the preformed microspheres by diffusion from an external aqueous solution of IL-2. Sustained release of the proteins from **porous alginate** /chitosan microspheres is of longer duration than from alginate/CaCl2, or from alginate/polylysine microspheres. Activity of the released IL-2 was investigated by determining the induction of cytotoxic T lymphocytes (CTL) when incubated with tumor cells and lymphocytes. It was found that the IL-2 remained active in the alginate/chitosan microspheres since the released IL-2 triggered induction of CTL. Further, IL-2 released in a sustained manner triggered induction of CTL more efficiently than free IL-2. Tumor-killing specific activity of CTL was the same whether induced by the sustained released IL-2 or by the addition of free IL-2.